AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): Steel block for the manufacture of moulds for the injection moulding of plastics material or the moulding of metals or for the manufacture of metal-working parts, having a thickness greater than 20 mm, of which the structure is completely martensitic or martensito-bainitic, of which the hardness at all points is between 430 HB and 530 HB and of which the chemical composition of the steel comprises, in % by weight:

$0.180\% \leq C \leq 0.400\%$

~~$Si \leq 0.15\%$~~ $Si < 0.15\%$

$Mn \leq 2.5\%$

$Ni \leq 3\%$

$Cr \leq 3.5\%$

$Mo + W/2 \leq 2.8\%$

$V + Nb/2 + Ta/4 \leq 0.5\%$

$Al \leq 0.4\%$

$Ti + Zr/2 \leq 0.1\%$

- boron in a content of between 0.0005% and 0.015%,
- optionally one or more elements from among sulphur, selenium and tellurium, the sum of contents of these elements being less than or equal to 0.2%,

– optionally one or more elements from among lead and bismuth, the sum of contents of these elements being less than or equal to 0.2%,

– optionally calcium in a content of less than or equal to 0.1%,

the remainder being iron and impurities resulting from production, the copper being an impurity, the chemical composition also satisfying the following equations:

$$3.2 \leq Tr \leq 9$$

$$85 \leq Dr \leq 95$$

$$U/Dr \leq 10.0$$

$$Mo^* + 3xV^* \geq 0.4\%$$

in which, for contents expressed in %:

$$Tr = 1.8xC + 1.1xMn + 0.7xNi + 0.6xCr + 1.6xMo^* + K$$

wherein K = 0 if the steel does not contain boron and K = 0.5 if the steel contains boron

$$Dr = 54xC^{0.25} + 24.5x(Mo^* + 3xV^*)^{0.30} + 1.58xMn + 0.74xNi + 1.8xSi + 12.5x(Cr)^{0.20}$$

$$U = 1600xC + 100x(0.25xCr + Mo^* + 4.5xV^*)$$

$$R = 3.8xC + 10xSi + 3.3xMn + 2.4xNi + 1.4x(Cr + Mo^*)$$

$$Mo^* = Mo + W/2$$

$$V^* = V + Nb/2 + Ta/4$$

the contents of boron, aluminium, titanium, zirconium and nitrogen, expressed in thousandths of % by weight, being such that:

$$B \geq \frac{1}{3} \text{ x } K1 + 0.5$$

wherein $K1 = \text{Min}\,(I^*;J^*)$

$I = \text{Min}(N;\ N-0.29(Ti+Zr/2-5))$

$I^* = \text{Max}\,(0;I)$ and $J^* = \text{Max}\,(0;J)$

$$J = \text{Min}\left(N;0.5\left(N - 0.52\,Al + \sqrt{(N - 0.52\,Al)^2 + 283}\right)\right).$$

2. (original): Steel block according to claim 1, of which the chemical composition is such that

$R > 11$

3. (previously presented): Steel block according to claim 1, characterised in that

$R \leq 2.7xTr$

4. (currently amended): Steel block according to claim 1, characterised in that ~~the silicon content is strictly less than 0.45 % by weight and~~ the carbon content is less than or equal to 0.35 % by weight.

5. (previously presented): Steel block according to claim 1, characterised in that $R/(2.7xTr) \leq 0.90$.

6. (original): Steel block according to claim 5, characterised in that $R/(2.7xTr) \leq 0.80$.

7. (previously presented): Steel block according to claim 1, characterised in that $U/Dr < 9.0$.

8. (currently amended): Steel block according to claim 7, characterised in that the composition is such that:

$0.230\% \leq C \leq 0.350\%$

~~Si ≤ 0.15%~~ Si < 0.15%

0.1% ≤ Mn ≤ 1.8%

Ni ≤ 2%

0.2% ≤ Cr ≤ 3%

Mo + W/2 ≤ 2.5%

V + Nb/2 + Ta/4 ≤ 0.3%

Mo* + 3xV* ≥ 0.8%.

9. (currently amended): Steel block according to claim 8, characterised in that its composition is such that:

0.240% ≤ C ≤ 0.320%

~~Si ≤ 0.15%~~ Si < 0.15%

0.1% ≤ Mn ≤ 1.6%

Ni ≤ 2%

0.2% ≤ Cr ≤ 2.5%

0.3% ≤ Mo + W/2 ≤ 2.5%

V + Nb/2 + Ta/4 ≤ 0.3%

Mo* + 3xV* ≥ 1.2%.

10. (previously presented): Steel block according to claim 8, characterised in that Tr > 4.5.

11. (previously presented): Steel mould part machined in a block according to claim 1, of which at least a portion of the surface is hardened by nitriding and of which the hardness at all points is between 430 HB and 530 HB.

12. (new): Steel block according to claim 1, wherein Si $\leq$ 0.13%.

13. (new): Steel block according to claim 1, wherein Si $\leq$ 0.12%.

14. (new): Steel block according to claim 1, wherein Si $\leq$ 0.1%.

15. (new): Steel block according to claim 1, wherein Si $\leq$ 0.05%.